489 Sheep trading, which has grown greatly in these last few years,
[437] is largely carried on by barter. It is especially done by Arab caravaneers from the Touat who go to the Sudan with dates, tobacco, fabrics, and blankets, which they exchange not in the markets but in the camps. Tuareg from the Adrar des Iforas and Kounta Arabs also do the opposite and take their sheep to the Tidikelt and Touat.

439 In 1939 the sale price of sheep on the market at In-Salah
435 was from 75 to 100 francs. The purchase price in the Sudan varied from 35 to 45 francs, but as we said, barter was most often the basis for all transactions.

And so for a camel that they received the Adrar Tuareg gave 120 sheep. One sheep alone was exchanged for 12 or 15 cubits of cloth or /317/ 10 guecaa of dates. A dokkali, a large blanket from the Touat which the Tuareg hold in high esteem, was worth 10 sheep in the Sudan and 7 in the Adrar.

436 The camel served as a basis of exchange. The Tuareg have
[177] never used money, although they did accept the Maria Theresa dollar which circulated in the Sudan and the Turkish livre which was widespread in Tripolitania. Sudanese tribes negotiated with
[825] toukourdi, the band of material serving as a veil, and with kori (Cypraea moneta), a little seashell native to the Indian Ocean.

648 Since the French occupation we have seen a certain number
439 of native merchants settle at Tamanrasset, the administrative capital of the Ahaggar. They are for the most part Mozabites and a few Arabs from Metlili who have constructed shops and have merchandise sent them by their correspondents in the Algerian Tell.

This recent state of affairs tends to grow more and more
[305] extensive, and the postal agency at Tamanrasset records several million transactions every year.

All the transactions that they make take place by means of barter. The most important profits that they realize result from barter carried on in the Aïr and the Niger with the salt, "chegga," and dates that they take there.

Market Prices in the Ahaggar

There are no set prices for meharis, or male or female camels. However, the prices for young camels are fixed and known. Thus:

A four-year-old camel, "aqnefoud," is worth 100 francs
" three-year-old " , "aleggues," " " 75 "
" two-year-old " , "aledjoudh," " " 50 "

For sheep and goats, the price basis is the goat, which is worth 3 mitqals, or 7.50 francs. A ewe is worth a goat and a half, or 11.25 francs, and a ram, two goats, or 15 francs.

A load of dates sells in the Ahaggar for 75 francs.

Barley sells for 1 franc per "guessaâ" or 60 francs for a load of 60 "guessaâs." Wheat is 1.25 francs per "guessaâ," or 75 francs per load.

"Chegga" sells for 1.25 per meter. /70/

Melted butter is sold at 7 "mouddas" (a small wooden measure) for a goat, or 7.50 francs.

Market Prices in the Ahnet

One female camel, 50 to 60 mitqals (125 to 150 francs)
One load of dates, 30 mitqals (75 francs)
One sheep, 7.50 francs
One goat, 10 francs
Melted butter, 7 "mouddas" for 7.50 francs
One donkey, 25 francs

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

In literature there seems to be no reliable information about the existence of irrigation agriculture in Ahaggar until Duveyrier, who states that agriculture did not obtain a fixed position in the economic life of the Ahaggar Tuareg until the reign of the *Amenukal Elkhaj Akhmed* (1830–1877) (cf. Duveyrier 1864, p. 369). This statement is confirmed by most agriculturists and pastoral Tuareg in Ahaggar, who claim that prior to *Elkhaj Akhmed* irrigation agriculture was not practised in Ahaggar. During the reign of this *Amenukal* irrigation agriculture by means of the subterranean aqueducts known to the Arabs as *foggara* (*ifeli*, pl. *ifelan*) was introduced by *Ahl Azzi* Arabs and negroid *Ḥarratin* from the Tidikelt oases. Some people of Ahaggar claim that another irrigation system was introduced about the same time, namely irrigation wells from which water is drawn by oxen and donkeys. This system, known as *tanut*, is said to have been introduced by agriculturists from Ġanet (Djanet) (the *Kel Ġanet*). It should be noted that there are certain traditions which claim irrigation agriculture to be older in Ahaggar. One tradition says that it was practised at Silet-Tibeġhin by Arabs who immigrated from Tawat to cultivate by means of the *foggara* system even during the reign of the *Imenan* (Lhote 1955, p. 286 f.). Another tradition, recorded by Foucauld, states that irrigation farming was known at a very remote date by the *Isebeten* – a pagan people said to be the ancestors of the oldest vassal tribes of Ahaggar (cf. Foucauld 1951–52, II, p. 535 f.). Traditions of the age of irrigation agriculture in Ahaggar are conflicting. If it was practised long before the reign of *Elkhaj Akhmed* by the ancient vassals, I believe that water was raised by human power, namely by the pole and bucket provided with a counterweight. For this system, which is known as *ajudid*, is said to have been very common in the past. It is extremely rare nowadys, and I have only seen it once at Terhenanet. There can be no doubt that this simple irrigation method is a very old one in North Africa, where it is more widely distributed than all other types of irrigation methods (cf. Capot-Rey 1953a, map VII p. 320). The very wide distribution of this system elsewhere in the Old World points to its great age, and it is perhaps to be considered the oldest true irrigation machine.

A few Tuareg in the northern groups practise irrigation agriculture, which does not seem to be one of their traditional occupations. Tuareg irrigation farmers are found mainly in the Fezzan, but mention should also be made of the people of three noble tribes, namely the *Ilemtéyen* (living at Ġat), the *Ikadeyen* (at Tit in Ahaggar), and the *Kel-ahem-mellen* (roaming pastoralists north of Ahaggar or settled farmers at the oasis of Inṛer in Tidikelt). These sedentary or semi-sedentary noble Tuareg were originally true pastoralists, though but little is known of the original mode of livelihood of the *Ikadeyen*. A few individuals or families among the Ahaggar vassals have more recently taken up irrigation agriculture in addition to stock-breeding. There seems to be a growing tendency towards semi-nomadism in Ahaggar nowadays. There may be several reasons for this. Thus one can point to the decline of caravan trading and to the fact that pastoral Tuareg cannot so easily get the true agriculturists to cultivate for them. The true agriculturists of Ahaggar comprise the *Ḥarratin* (*Izeggaṛen*) of Tidikelt, who have mixed with the manumitted slaves now also known as *Ḥarratin* (*Izeggaṛen*), a few fair-skinned *Ahl Azzi* Arabs, and the *Kel Ġanet* who are predominantly black-skinned. All these agricultural people tend to mix with each other and also with tribes of pastoral Tuareg.

There are at present about 25 agricultural settlements in the river valleys of Ahaggar. Apart from the administration centre of Tamanṛaset (1600) and the oasis of Abalessa (547) these agricultural

7:Nicolaisen E-5 (1951-1962) 1963 . MS25 Tuareg MS25

obtain a larger amount of vegetable food products and more wheat and barley. The pastoral Tuareg gain less from their gardens than they did when the *khamast* system prevailed, but it is still profitable for them to be garden owners.

The quantity of agricultural products anually consumed per person among the *Kel Ahaggar* is estimated by Lhote at 187 kilos millet, 15 kilos dates, and a small amount of wheat for which no figure is given. For Arabs of the Sahara the quantity of vegetable food is estimated at 180 kilos wheat, and 75 kilos dates anually per person (Lhote 1955a, p. 263). I add to this that wheat is used for bread to a very large extent by the Ahaggar Tuareg, who also make much use of barley for bread and porridge. According to Malaurie the amount of agricultural food products available per person among the Ahaggar Tuareg is about 400 grammes a day, or 146 kilos anually (Malaurie 1953, p. 342). It should be noted again that the amount of agricultural food products necessary for a Tuareg household varies greatly from one year to the other. In years of drought when agricultural products form so to speak the only source of food for the nomads, they estimate that a household consisting of husband, wife, and one child will consume about two kilos of cereals (dates) every day, or 730 kilos in a year. Consequently the amount of cereals and dates consumed anually per person may in dry years rise to about 245 kilos. This seems to correspond to the amount of food considered necessary for Arabs of Tidikelt and Tawat, who live almost exclusively on cereals and dates. When employed as labourers by the French Administration these sedentary Arabs are given 16 kilos of wheat and 4 kilos of rice a month, or 240 kilos of agricultural products anually per person (Information obtained from the administration office of In Salah in 1954). The agricultural products obtained by a pastoral household from a single garden will not meet the needs of the household and its slaves even in years of good grazing, and less so in dry years when pastoralists subsist entirely on agricultural food products. I give an example: During the year 1954 55 which was extremely dry, a Tuareg who owned three gardens cultivated with an *aril* agreement could not feed his household and his slaves (comprising two men, two women, and three children from five to twelve years old) by means of his own garden products. The Ahaggar Tuareg depend on caravan trading for their provisions of agricultural food, and trading also helps them to create the capital of millet and dates which is invested in their gardens in Ahaggar grown on their behalf by agriculturists. I believe that most pastoral households of Ahaggar have gardens, but there are Tuareg who have none. This is true, for instance, of most Tuareg living in and around the Ahnet Massif. Tuareg of this region formerly had gardens irrigated by the *foggara* system at Abalessa, but to-day they acquire their vegetable food products mainly by caravan trading.

IRRIGATION AGRICULTURE IN AYR

The largest aggregation of sedentary people in Ayr is found in Agadez (4.737), which is inhabited almost exclusively by negroid peoples who speak Hausa though most of them also know the Tuareg language (*tamacheq*). This large sedentary population mainly lives on trade and on crafts of various kinds. The inhabitants are known to the Tuareg as the *Imeggedezen*. They are said to be related to the Sultan (or the *Amenukal*) of Agadez. There is a tradition which claims that the Sultan came

Caravan Trading

Caravan trading of the Sahara has suffered severely from the European colonisation of Northern Africa. The establishment of ports and railways in the Sudanese area and the abolition of the slave-trade have brought to an end the large caravans passing through the desert. In recent times another heavy blow has been struck against the caravans, for transportation is more and more taken over by trucks which can easily pass through the open desert country. Many pastoralists of Northern Africa suffer from the decline of their trade, which for centuries has been an important stabilizing factor for their subsistence. The decline of caravan trading is also strongly felt in the oases, which have played a very important part as trading posts or trading stations. Some of these oases have far fewer inhabitants nowadays than in the past, and it is most difficult for many sedentary people of the oases to exist. The decline of the trade has been felt also among the pastoral Tuareg. But caravan trading is still important to most of them, and many of them could not support life without it. To understand the important role of caravan trading we have once more to return to the economic values of subsistence activities.

CARAVAN TRADING OF THE AHAGGAR TUAREG

The Ahaggar Tuareg cannot live exclusively on stock-breeding products all the year round – not even in good years when annual pasture is well developed in autumn and early winter. Even in a good year the nomads mainly eat vegetable food throughout the hot season, and some bread or porridge is also consumed during the period of abundant milk yields. It is true that nomads can subsist entirely on milk for long periods, and that some people do so for weeks or even months. Galan says that pastoralists of of Ahaggar, when they live entirely on milk, can do with four litres a day per person (Galan 1951, p. 231). But it is estimated by the Ayr Tuareg that they need about eight or ten litres a day to live entirely on milk, and they all claim that they get weary from constant milk drinking. They say that though they do not feel hungry when they live exclusively on milk they experience a peculiar, unpleasant feeling in the stomach. The relative importance of stock-breeding products (mainly milk) and vegetable food (mainly wheat, millet, and dates) may be seen from the diagram Fig. 151. In a good year there is normally some possibility of collecting wild seeds for bread and porridge, but the Tuareg claim that they cannot easily cover their need of vegetable products even in a year when milk is abundant. And milk is not always abundant. We can estimate that for two or three good years

[p. 209]

[cf. p. 216]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

there will be one entirely dry year throughout, during which stock-breeding products have little or no value as food, and in such years of dry pasture there will also be very few wild plants to collect. Hunting, which plays little part for most Tuareg nowadays, is also of little value in an entirely dry year when many game animals die or migrate to other regions with more favourable pasture. It would seem obvious for pastoral Tuareg to do the same and to take their animals to grazing grounds outside of Ahaggar – particularly to the southern plains where pasture is normally better than in their own country. We have seen that most Ahaggar Tuareg in bad years have their she-camels far from Ahaggar in the Tamesna plains or in the country north of Aḏraṛ-n-Foṛas. We have also mentioned that, under very severe conditions, camps of Ahaggar and Ahnet may move to these southern regions with their flocks, though extensive goat-migrations are not always profitable. But most Tuareg remain in Ahaggar even in very dry years with their camps and flocks. Some of the animals will die, and none of them can be mated so that the flocks may rapidly decrease. During such years of drought the Ahaggar Tuareg live so to speak exclusively on agricultural food products of which they get only a part from their gardens grown by sedentary agriculturists (the *Ḥarratin*, or *Izzegaṛen*). It is mainly through caravan trading that the Ahaggar Tuareg acquire their vegetable food products. Their two important trading expeditions to the Tidikelt oases and to the Sudan are carried out anually for the main purpose of acquiring ḍates and millet.

Trading with the Tidikelt oases (Awlef and In Salah) is based mainly upon a surplus of goats, camels, butter and cheese, and on dried meat. But many Tuareg who obtain large amounts of millet from the Sudanese trading expedition also sell part of their wheat grown in their own gardens in Ahaggar, and Sudanese articles bought during their south-bound trading expedition. In a dry year some Tuareg may choose not to visit the Tidikelt area as they have too small a surplus for trading. The south-bound caravans, on the other hand, are rarely prevented from going as their main trading object is rock-salt of an excellent quality mined at Amaḍṛor north-east of the Ahaggar Massif. Both north-bound and south-bound caravans will set off in autumn when the hottest season has come to an end, that is at the end of September or at the bĝinning of October.

The caravan route from Tamanṛaset in Ahaggar to In Salah in Tidikelt is about 750 kilometres, and the route is rather difficult because pasture is normally lacking for three to four days of the journey. Most Tuareg who cross this part of the desert therefore bring with them large supplies of the dried *tullult*-grass (*Aristida pungens*), which also serves as fodder for the pack-camels during the stay in the oases around which there is little pasture. The journey takes about twenty days in each direction, and the north-bound caravans return to Ahaggar again already in December or in January. The traders return with their camels loaded with dates of which a part may be re-sold in Ahaggar (Tamanṛaset), but they also buy European cotton and other European articles, which are cheaper in the north, and woollen blankets woven by sedentary people of the northern oases.

The south-bound caravans are very extensive. The towns visited in the south are Agadez, Tawa Tanut, and Zinder. The distance from Tamanṛaset to Zinder is, as the crow flies, about 1200 kilometres, while the distance from Tamanṛaset to Amaḍṛor, where salt is mined, is about 300 kilometres. In total the caravan journey from Ahaggar to Zinder and back again for many Tuareg amounts to more than 3000 kilometres. The south-bound caravans are organized as follows:— Slaves take the

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

366
563
291
252
443

Fig. 149. The market place of Agadez. In the front negroid Hausa men roasting small pieces of meat on a spit; in the background Tuareg camels offered for sale.

484 pack-camels to the salt pit of Amadror to mine salt in the hot season. They load the camels with salt
487 and bring them to the camp where further preparations for the journey are made. When the caravans
[317] have started southwards they stop in the Tamesna plains and rest there for at least one month to allow
[437] the pack-camels to feed on annual pasture, and, if necessary, to exchange the pack-camels with others kept by the Ahaggar Tuareg in Tamesna. Thereupon the caravan will continue towards the millet-
[22] growing towns and villages of the Sudan to bargain with the Hausa. The caravan returns to Ahaggar again at the end of March or at the beginning of April, so that the total duration of a south-bound caravan is up to six or seven months.

433 The Sudanese millet trade is of extreme value to the subsistence of the Ahaggar Tuareg. It is partic-
439 ularly important to their economy that they obtain millet for non-nomadic products transported by camels, which are mainly bred outside of Ahaggar. The millet trade is consequently not much influenced by Ahaggar's changeable climate. According to official statistics, the Ahaggar caravans in 1946 exported 375 tons salt, and imported 720 tons millet, while the cereals grown in Ahaggar amounted to 197 tons (cf. Malaurie 1953, p. 344). According to Galan vegetable food grown in the gardens of Ahaggar in 1950 (a bad year) amounted to 121 tons wheat, 5 tons millet and barley, and 4 tons of tomatoes – about 10 kg of wheat and 0.5 kg of millet, barley, and tomatoes per person (Galan 1951,
[468] p. 233). We see from this that the amount of cereals acquired in the Sudan far exceeds the amount grown in Ahaggar, and as we have mentioned, the millet trade is also important for the establishment of Tuareg agriculture in their own country where this cereal is used for payments to cultivators. It can also be added that the Sudanese caravan trade is more important to the Tuareg than appears from
[435] the figures above. For salt is much more valuable than millet, and for one load of salt the Tuareg receive from four to fifteen loads of millet – in 1946 the price was fifteen to one (cf. Malaurie 1953, p. 344). It is evident that the Tuareg could not take all this millet back to Ahaggar. Most of it is re-sold

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

tions have remained important to the Ahaggar Tuareg, and it is clear that they would not go on trading were these expeditions not profitable, for trading expeditions are extremely strenuous. Though the expeditions set off when the extreme heat is decreasing, it is still very hot in the extensive barren plains in autumn and in winter during daytime. Water and pasture are often extremely scarce in this deserted country, and the Tuareg frequently have to travel rapidly. For days or weeks they live so to say on their camels, and if camels are not too heavily loaded they may do up to 16 hours a day for several days in succession. Under such journeys the Tuareg eat only once a day. Obviously such trading expeditions are also very hard on the pack-camels, and there is always a risk of loosing a camel during such journeys through barren, desert country.

In this brief outline of caravan trading I have not considered those Ahaggar Tuareg living constantly in the Tamesna plains and adjacent regions. These Tuareg own more livestock than the Tuareg of the Ahaggar Massif, and I do not believe that they engage so much in extensive trading expeditions. They are comparatively rich in she-camels which are tolerably good milk yielders in these regions most of the year, and milk is more important as food than it is in Ahaggar. I believe that most Ahaggar Tuareg of the Tamesna region acquire their necessary vegetable products by selling surplus livestock butter and cheese at the markets of Ingal and Agadez.

CARAVAN TRADING OF THE AYR TUAREG

Among the Ayr Tuareg stock-breeding products are far more important for food than in the north. Grazing conditions are better with annual pasture as a recurrent event, and the Tuareg keep bigger flocks of goats and sheep, larger camel herds, and most have a few zebus which are guarded without much difficulty. The *Kel Ferwan* Tuareg of Southern Ayr can live on milk for a large part of the year, though they, like those of Ahaggar, become tired of milk drinking if they get no solid food. There are Tuareg of Southern Ayr who live exclusively on milk for two or three months during the periods of *akasa* and *ɣarat* and to whom milk is important as food for at least six months. In the extremely hot season of *ɛwilen* when milk is very scarce most Tuareg eat millet porridge with a little milk or sauce (cf. p. 242 f.), and Tuareg who are not very wealthy eat millet porridge to a great extent all the year round, so that the necessary amount of millet for many camps is about 0.5 kilo a day per person, or about 180 kilos a year. In Ayr there are fairly good possibilities of collecting if there are not too many locusts, but most Tuareg do not collect a great quantity of wild seeds, and claim that they would be very badly off without millet, as seeds of wild plants are not very nourishing in comparison. In one year during the second world war (in 1943) they say that millet was very hard to get; it was then very difficult to subsist and a great many animals had to be killed for food. Millet is almost indispensable to the Tuareg; they also consume other vegetables derived from agriculture, notably wheat, maize, and dates, but millet is the most essential non-nomadic food product. Normally it can be acquired by most Ayr Tuareg without much difficulty.

The people of Ayr obtain their provisions of millet from the Sudanese area of shifting cultivation, notably from Damergu (Tanut). Millet can also be bought at Agadez whereto it is brought by Tuareg

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

439 caravans of the south or by Ayr Tuareg who import more millet than they need for their own use.
437 But millet is cheaper in Damergu than at the Agadez market, and most Tuareg prefer to organize
435 their own millet caravans with camels and donkeys as pack-animals. In Damergu most Ayr Tuareg
492 get millet in exchange for livestock or they buy it for money. Their caravans are not always very large,
476 for the Southern Ayr Tuareg of the *Kel Ferwan* group do not organize their caravans co-operatively
484 on the basis of kinship. Many individual households fetch their own millet with a few animals, and it
592 is comparatively easy to do so as the millet growing country of Damergu is not very far away – the distance from Agadez to Tanut is only about 300 kilometres. The Ayr Tuareg do not have to engage in extensive trading expeditions to procure millet, and can buy millet very cheaply. A household, it
437 is said, does not have to sell a great many animals to secure the necessary supply of millet. Three or
439 four camel loads will cover the needs of most households, and this amount of millet can be acquired
435 for comparatively few animals – particularly if the animals vended are sheep, which have become
592 very expensive in recent times owing to the rapid increase of Europeans at Agadez. An extremely good
162 sheep or ram for slaughtering can bring in 2000 to 3000 West African francs, and a Tuareg household which buys millet in Damergu will need less than 10,000 francs to acquire the quantity necessary for a year. Thus the Ayr Tuareg can obtain their millet for a few sheep, and there are very few, if any, who do not posses this surplus, and it should be repeated that the increment of livestock is never stopped by drought periods as in the north. The extremely high price for sheep for butchering is a recent phenomena due to the increase of the French population. Fully-grown sheep or rams are expensive, and this is also the case with fowls, while goats are cheap. I believe we can estimate that a household would have to sell about 15 goats anually to obtain the amount of millet necessary for one year's consumption. However, there is little doubt that it has always been quite easy for the Tuareg of Southern Ayr to obtain the requisite amount of millet in exchange for livestock.

262 Millet and milk constitute the basic nourishment of the Ayr Tuareg, but they are very fond of an
222 occasional change of food. And I believe that this is one important reason why the Ayr Tuareg, like those of Ahaggar, collect wild seeds even in years when grown cereals are abundant. For a change, the Ayr Tuareg are also extremely fond of dates which are not grown to any great extent in their own country. A few Ayr Tuareg own palms yielding dates of poor quality, and I think that a few house-
439 holds also obtain some dates from Ingal. However, most dates eaten in Ayr are imported from the oasis of Bilma, situated in the very barren desert country between Ayr and Tibesti, about 700 kilometres north-east of Agadez.

437 The trade with Bilma is apparently an ancient one, and its foundation is salt which is of a very bad
439 quality compared with that mined at Amadror in the north. The rock-salt of Amadror is excellent
317 for food, and though there is one good quality of Bilma salt that is used for food by the Tuareg of
263 Ayr, most salt from Bilma contains much soil and other impurities. This impure salt is excellent for
233 domestic animals which, in Ayr and further south where salt pastures do not exist, need a lot of salt. The Ayr Tuareg, and particularly those who do not visit the country of Azaouaq at the end of the rains, need salt not only for their own food but also for their domestic animals. They obtain this from Bilma, which is visited by caravans in autumn or in the early winter. The inhabitants of Bilma, like other oases-dwellers, are in constant need of cereals and meat, and these products are imported

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

by the Tuareg of Ayr, the *Kel Geres*, and other Tuareg. The Tuareg obtain salt generally in exchange for millet, but they also bring with them dried meat, and meat from animals newly slaughtered; and although this meat is largely rotten when it arrives at Bilma it is easily sold to the oases dwellers who are yearning for meat. The oases dwellers have little to subsist upon but dates of which they have a surplus. This is purchased by the Tuareg, who get two loads of dates for one load of millet. The Bilma trade is less important nowadays than it was at the beginning of the century. In 1922 the Bilma caravans comprised about 7000 camels (Buchanan 1926, p. 83), while in 1908, when the trade was already decreasing, caravans numbered about 20,000 camels (Abadie 1927, p. 292). Caravans still go to Bilma to fetch salt and dates, but the salt trade is not so profitable to-day when Bilma salt can be bought fairly cheaply at Agadez, as the trucks bringing provisions from Agadez to the French administration and to the merchants of Bilma, take salt back with them when they return. The Ayr Tuareg do not organize their trading expeditions within family groups or sections as in Ahaggar. A Tuareg who does not want himself to go to Bilma may let a kinsman or a friend trade for him with his camels. The payment for this is a large loaf of salt which constitute one sixth or one seventh of a camel load.

The Ayr Tuareg do not generally obtain salt from the pits of Tegidda-n-tésemt though this place is not very far from the Massif to the west. They say that the Tegidda salt is not as good as Bilma's. The salt of Tegidda-n-tésemt is purchased mainly by the *Iwillemmeden Kel Dennek* when visiting the regions around Ingal after the rains. Some of the *Kel Ayr* who live in the extreme north (the *Kel Tédalé*, and others) occasionally go to Amadror in the north to fetch salt which is taken down to the Sudanese towns and villages. In years when drought prevails in Ahaggar these Tuareg take their surplus of livestock to the market at Tamanṛaset, for in dry years the provision of meat, butter, and cheese consumed in Ahaggar come mainly from Ayr and adjacent regions. When I stayed in Ahaggar in 1954–55 a great many Tuareg of the *Kel Tédalé* came to Tamanṛaset to sell camels, donkeys, sheep, goats, and zebus, and also brought with them large quantities of cow's butter and cheese. The route followed from Northern Ayr to Ahaggar runs via I-n-aẓawa and I-n-abeggi which are the only wells between the two mountain massifs. Water is very scarce and so is pasture, which is mainly limited to a scattered vegetation of annual plants; over very large areas there is no vegetation at all. It is easy to drive camels and donkeys through these regions, while more difficult for sheep, goats, and cattle. The zebus easily get cut hooves from walking on stony ground, while sheep and goats suffer much from thirst. In spite of this, all kinds of livestock can be driven through the barren desert from Ayr to Ahaggar, even as late as the month of March which is extremely hot in the barren desert country. The Tuareg frequently lose animals which die from thirst and hunger during the journey, but the trade is nevertheless extremely profitable as prices of livestock are high in Ahaggar in dry years, while prices of European goods such as tea, sugar, cotton, metal vessels, and the like are extremenly low compared with the prices asked for these goods in Ayr.

The Ayr Tuareg, though owning more livestock than the Tuareg of Ahaggar, have a certain demand of agricultural food products. These products are mainly grown outside of the Massif, for the farmers of Ayr grow little millet, very few dates, and part of the wheat grown in Ayr is exported to the oases of Ġanet and Ṛat in the north. Though these vegetable products can be purchased at Agadez, it is profitable to fetch them where they are cheap, namely in the Sudan (millet) and in Bilma (dates). And

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

added that wars were not confirmed to fighting between these large political groups, for there was also fighting within these groups at intervals.

The Ayr Tuareg had as their main enemies the Tebu, the Eastern *Iwllemmeden* and the Arab pastoralists of the Tawa district. In Ayr there were also sharp disputes between various drum-groups of the Ayr federation, notably between the *Kel Ferwan* and the *Kel Faday*. The *Kel Faday* Tuareg frequently joined forces with the *Kel Dennek* in fighting the *Kel Ferwan*.

Throughout the 19th century there was a risk of severe trouble everywhere in the Sahara with adjacent regions, but caravan trading was most important to Tuareg subsistence at that period in spite of these latent conditions of hostility.

Great caravans then crossed the desert carrying gold, ivory, ostrich feathers, and slaves from the Sudan to the Mediterranean, and south-bound caravans traded with salt and Arab and European goods. The Tuareg had their important part in these large trading expeditions, and they traded with their surplus of livestock and stock-breeding products much in the same way as they do nowadays. They acquired dates and millet from the sedentary farmers who were in constant need of meat, butter, cheese, and the like.

The organization of caravan trading among the Ahaggar Tuareg was different in the past. To-day the normal trading units are tribal sections, and this was probably also true in pre-European times, but these trading units did not travel independently as they do nowadays. Several tribes of the same drum-group travelled together under the leadership of a noble Tuareg of the dominant tribe of their chiefdom. When the Ahaggar Tuareg had no severe disputes with the *Ulad Ba Ḥammu* who dominated the Tidikelt oases, they traded with their population of sedentary farmers much as they do nowadays. They brought livestock, butter, dried meat, and Sudanese goods which were bartered for dates and Arab goods. The Ahaggar Tuareg also traded southwards, but they say that they did not go further south than Agadez, as it was considered dangerous to penetrate too far into the Sudan. They also say that they did not trade with salt until a few years before the arrival of the French, and that the important trading object before that time were donkeys, of which there was a shortage in Ayr. All this seems to agree with Duveyrier's statement that the salt deposits of Amadror were not utilized in his time owing to insecurity, though he says that the deposits situated on the caravan road from Wargla to Agadez had formerly been mined (Duveyrier 1864, p. 143 f.). As to the caravan trade of the Ayr Tuareg, I believe that it was very much as it is nowadays, comprising trading expeditions to the millet-growing Sudan and to the Bilma oasis. It is most possible that the Ayr Tuareg also then travelled in larger units to protect themselves and their goods, for the *Kel Ferwan* Tuareg say that in the past camps were always bigger than to-day, as a camp consisting only of three to five tents could not defend itself against raiders.

It is known that the slave trade was carried on until the arrival of Europeans and in certain parts of the Sahara even later. Both the *Kel Ahaggar* and the *Kel Ayr* claim that they engaged in slave trading until it was abolished by the French authorities. However, it seems as if the Tuareg never engaged in this trade to the same extent as the Arabs. This is stated by Bissuel in regard to the Tuareg of Ahnet who bought their slaves from the market of Timbuktu. In general they kept these slaves for their own use, in contrast to the Arabs of Tidikelt who traded with slaves on a very large scale (Bissuel

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

1888, p. 21 f.). Duveyrier says that among the *Kel Ajjer* all noble Tuareg had slaves, while only some of the vassals were slave owners. He says that slaves were bought and sold in towns (Duveyrier 1864, p. 339). Information about the Tuareg slave trade is given by Richardson, who undertook his journeys mainly to collect material on slavery which is described throughout his journals. According to Richardson's descriptions there can be little doubt that the Tuareg engaged in the slave trade, but I think that perhaps his statements are tinged by his deep antiphathy to slavery (cf. Richardson 1848, I–II & 1853, I–II). It is most possible that the Tuareg slave caravans he mentions were organized by Arab merchants of Ṛat and Ṛadames. The former engagement of pastoral Tuareg in the slave trade has also been mentioned by Lyon (Lyon 1821).

As to Tuareg caravan trade throughout the 19th century, we can add that all Tuareg tribes did not trade to the same extent. Within most groups there were certain tribes of particular classes which did not go in so much for warfare and raiding, but were keen traders. This was true of tribes of the *Isəkkemaren* class in Ahaggar, and in Ahnet there were two Arab tribes allied with the drum-group of *Taytoḳ*, namely the *Sekakna* and the *Mazil* who were responsible for the very important trade with Timbuktu (Bissuel 1888, p. 24). Among the *Kel Ajjer* the *Iforas* tribes traded on a much larger scale than other tribes (Duveyrier 1864, p. 359 ff.). In Ayr the same was true of certain tribes of the *Kel Ewey* group.

However, throughout the 19th century all Tuareg, with the exception of those of the nobility, engaged in caravan trading which played a great part for the pastoralists, providing them with cereals and dates necessary for their subsistence. Already in this century certain pastoralists had taken up irrigation agriculture, and some of them practised a very primitive type of agriculture, but vegetable products were acquired mainly through caravan trading.

[Text continues on p. 221]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

172
412

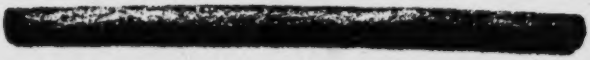

Fig. 200. Neolithic stone pestle. From Oluſsen's collection. The Tuareg of Ahaggar say that these pestles were made by the ancient *Isebteen* people. Dimension: 0.81 m long, 0.045–0.050 m in diameter. (N.M. G. 1.46).

301
751

Fig. 201. A stone amulet (*ameywas*) made by a Tuareg woman of a brown and white stone like that depicted. Ahaggar, the *Aguh-an-tehlé* tribe. Dimension of the amulet: 0.025 m in diameter. (F.M. 176).

The pottery made in

323
331 Ahaggar is plain and usually without any kind of ornamentation. But I have brought home from Abalessa a piece of a pot decorated with pricks in much the same way as are the prehistoric potsherds frequently found in caves in the Ahaggar Mountains. The pot in question was made by a woman from Abalessa. The pots to be burned are covered with wood, and small pieces of wood are also placed within them. Burning takes place in the evening when there is not too much wind, and the pots are removed next morning. After burning, the pots assume a red colour, but all pots that have

114
113
437 been used over the fire for some time become black. I have myself never attended the manufacturing of pottery in Ahaggar, and readers are referred to a study by Lhote for more detailed information (Lhote 1947b, p. 145–154). Pastoral Tuareg of Ahaggar acquire most of their earthen pots from sedentary agriculturists of their own country, but they also buy some pots of superior quality during trading expeditions to the Sudan (Fig. 192).

462 In Ayr, pottery is manufactured by sedentary women of Agadez and probably also by women of the sedentary *Kel Ewey* of certain Ayr villages. No true pastoralists seem to make pots, which in Ayr are manufactured according to techniques related to those from Ahaggar (cf. Lhote 1950c, p. 507–512).

[Text continues on p. 260]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

Fig. 203. Earthen incense jar (*elbakkhar*). Abagger, *Harrata* at Abalessa. Dimension: 0.179 m high. (N.M. G. 5889).

512). Most pastoral Tuareg of Ayr get their pots from Agadez, but pots are also imported from the south where they are of superior quality. These pots are said to be manufactured by black-skinned *Igdalen* Tuareg (cf. p. 432) of the southlands, notably by people of the *Ikenawen* class which comprises professional pot-makers. These people are not found among the *Kel Ayr* but are common in camps of the *Kel Geres* where I have met them. They speak *tamachek* but also have their own language which is said to be related to *Songay*. The pots made by these southern people are painted and decorated (cf. Fig. 205) in contrast to those of Agadez which are plain and of very simple forms (Figs. 204a–b). So far as I am aware painted and decorated pottery is rarely manufactured in Ayr nowadays. But Rodd states that such pottery in the form of pitchers with a blue design is made near Agadez (Rodd 1926a, p. 160 f., pl. 22 p. 209), and when I investigated ruins of stone houses at Iferwan I found a great many sherds of finely-decorated painted pots which must have been used up to the end of the great Tuareg revolt in 1917 when these houses were destroyed by the French. Lhote has also mentioned the decline of pottery techniques in Ayr, and he states that, apart from little incense jars, no painted and decorated pots are manufactured at Agadez nowadays (Lhote 1950c, p. 511).

Certain metal receptacles were known to the Tuareg long before the European occupation, notably a cooking pot (*ɛrir*) made from copper, and the flat drinking bowl (*tamennast*) made from tinned copper or brass in Tripolitania, or in Tunisia. Metal receptacles are also manufactured by native blacksmiths in Tuareg country, e.g., the pail (*ɛrir*) to be used for liquid butter (Fig. 164).

The blacksmiths are excellent wood-workers and make most wooden domestic utensils used by pastoral Tuareg (Figs. 21b, 37, 38, 58, 60, 61, 62, 63a–b, 75, 150, 153–154, 166, 176, 177, 178, 191, 194, 195, 212a, 219a–b, 285). The main implements for wood working are axes and adzes (Figs. 206a–d).

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

vassals was given to the drum-chief (the *Amenukal*) and not to the *temaẓlayt* master. However, should a vassal Tuareg have borrowed for raiding a riding camel from his *temaẓlayt* master or another noble Tuareg, they received a tribute also known as *abellaɣ*, comprising half of the booty remaining when one half had been given to the *Amenukal*.

The noble Tuareg possessed many advantages over their individual vassals. They could apparently claim almost what they wanted for their subsistence, and frequently camped close to their vassals who then were obliged to feed them, and when in need of riding camels the noble Tuareg could freely take such animals from their vassals (Duveyrier 1864, p. 334 ff.). Similar information is given by Benhazera, but he states that the vassals in the past would not necessarily supply everything demanded by their noble lords (Benhazera 1908, p. 54). The vassals were under a particular obligation to provide the noble Tuareg with goat-breeding products, and if they had milk yielding she-camels the noble Tuareg could claim these animals until milk-yielding stopped. But the vassals had also many advantages from the *temaẓlayt* relationships. They were not only protected by their lords. The noble Tuareg would leave behind the animals they could not take with them when roaming in the desert, and noble Tuareg never had much livestock with them in their camps. It was also of great importance to the vassals that they could use their masters camels for caravan trading. On the whole the system was not exclusively the exploitation of vassals by the noble Tuareg, and it can be added that the vassal Tuareg were always more numerous than the noble Tuareg, that the drum-chief (the *Amenukal*) was elected by the vassals, and that he alone had judicial rights. The system was one of give and take to both classes involved, and there can be little doubt that it was well adapted to practical ecological conditions.

In Ahaggar, camels and goats are very complementary to each other. The camel supplies the Tuareg with milk, but with very few other products, and the Tuareg cannot always get milk from their she-camels which yield very little when pastures are dry. When grazing is good, camel's milk is important as food, but it is not well-fitted for churning butter, and cannot be used for cheese. Camels are occasionally killed, but as their meat is not very suitable for drying, the Ahaggar Tuareg kill camels to utilize their meat only when many people congregate, as for instance at a marriage. Camel's hide is not very important in Tuareg craft, for tanning is not practised, and Tuareg camels have little hair which is used only for the manufacture of a few insignificant objects. To most Ahaggar Tuareg the camels have little direct economic value. But for raiding in the past, camels were very valuable riding animals, and were then, as now, extremely important for caravan trading which provides the Tuareg with most of their vegetable food.

The economic rôle of goat-breeding is very different. Goat-products play a very comprehensive part in Tuareg nourishment. Goat's milk is not only drunk, but is also made into butter and cheese which can easily be stored. Goat's meat is superior to camel's meat, and one goat does not contain more meat than can be eaten quickly by the members of a normal household. Furthermore, goats are very important in Tuareg craft; tents, waterbags, and containers for different sorts of liquid and solid food are made predominantly from their skin, which was formerly also employed for whole garments. Goat's hair is extremely useful as material for ropes with which domestic animals are tethered, camel-loads are fastened, and the like.